

**IN THE CLAIMS:**

Please amend claims 1-11 and add claims 12-20 as follows:

1. (Currently Amended) A method for ~~W~~wireless audio signal transmission of method  
~~for~~ audio signals between a transmitting device (S40) and a ~~spatially adjacent~~ receiving device,  
the receiving device having (E50) ~~which is associated with an audio signal reproduction device~~  
~~(LB) included in a three-dimensional sound system,~~ this method comprising the steps  
of following features:

~~before transmission,~~ digitizing the audio signals;

coding the digitized audio signals;

transmitting the coded digitized audio signals as separate data streams~~are digitized in a~~  
~~transmitting device (S40), compressed, and transmitted by a digital high frequency transmission~~  
~~method as data packets (FD), wherein symbols are assigned to the individual data in a quadrature~~  
~~signal plane;~~

receiving the transmitted data streams;

decoding the received data streams;

outputting the decoded data streams through the audio signal reproduction device; and

providing a transmitter diversity operation ~~takes place between the transmitting device~~  
~~(S40) and the receiving device where (E50), wherein the transmitting device includes~~ has two  
high-frequency transmitters (S5, S6) with each having an associated transmission antennas and  
~~(AS1, AS2), which transmitters are separate but operating~~ in the same frequency band (f),  
~~whereas the audio signal reproduction device (LB) has only a single the receiving device~~  
~~(E50) with one having at least one receiving antenna (EA) and at least one high-frequency~~  
~~receiver (E5) for the frequency band (f); and~~

~~the two data streams for the transmitter diversity operation are derived by a predetermined coding instruction from the previously digitized audio data stream.~~

2. (Currently Amended) The Audio signal transmission method of according to Claim 1,  
~~characterized in that~~  
~~in the transmitting device (S40) where the step of digitizing further comprises the step of~~  
~~digitizing the audio signals into a the data sequence (D<sub>0</sub>), and where the method further~~  
~~comprises the steps of:~~

~~is converting before transmission the data sequence~~ into a first and second data  
sequence (D<sub>1</sub>, D<sub>2</sub>) of successive symbol pairs (Sy1, Sy2), wherein in the first and second data  
sequence (D<sub>1</sub>, D<sub>2</sub>) the symbol pairs that are related in time contain include the same symbols (A,  
B or C, D);

transposing in the first and second data sequence (D<sub>1</sub>, D<sub>2</sub>), the order of the symbols (A, B  
~~or C, D) within the symbol pairs in the first and second data sequence (Sy1, Sy2) is transposed~~  
relative to each other in the a time sequence; and

in addition to the time transposition, implementing a change in their coding of in regard  
~~to the quadrature signal components representing the coded digitized audio signals is~~  
~~implemented, wherein the change in coding relates to the sign of the particular symbol and/or to~~  
a transformation of the particular symbol to its complex conjugate value.

3. (Currently Amended) The Audio signal transmission method of according to Claim 2,  
~~where the change in coding relates to a transformation of the symbol to its complex conjugate~~  
~~value~~ characterized in that the data volume of the digitized audio signals is reduced by a

~~compression method in the transmitting device (S40), then reversed in the receiving device (E50) by an associated decompression method.~~

4. (Currently Amended)     The Audio signal transmission method of according to Claim 1, characterized in that the data packets (FD) contain header information (H) including control and auxiliary information where each digitized audio signal has a plurality of discrete data points, and where the step of coding further comprises the step of assigning a symbol in a quadrature signal plane to each discrete data point.

5. (Currently Amended)     The Audio signal transmission method of according to Claim 1, characterized in that the data component of each data packet (FD) contains audio data for two audio signal reproduction devices (LB), further comprising the step of compressing the digitized audio signals prior to the step of transmitting, and further comprising the step of decompressing the digitized audio signals after the step of receiving.

6. (Currently Amended)     The Audio signal transmission method of according to Claim 15, where the separate data streams are transmitted as data packets, each packet including header information comprising control and auxiliary information, each packet including data corresponding to the audio signals where each packet includes an even number of data blocks by which data associated with a first and second audio channel are alternately transmitted in block~~characterized in that each data packet (FD) contains an even number of data blocks by which the data of a first and second audio channel (L, R) are alternately transmitted in blocks.~~

7. (Currently Amended) A system for Transmitting device (S40) for use in a wireless audio signal transmission of digitized audio signals, comprising:

method according to claim 1 between the a transmitting device; and  
~~(S40) and a spatially adjacent receiving device;~~  
where (E50) which is associated with an audio signal reproduction device (LB) included  
in a three-dimensional sound system;

characterized in that

——the transmitting device (S40) contains includes a coding device that codes the two  
high frequency transmitters (S5, S6) to which digitized audio signals and control signals are  
supplied as data packets from a coding device (CS);, and includes

——the two high frequency transmitters (S5, S6) that generate quadrature signals in  
the same frequency band (f) which are modulated with the data of the data packets (FD); and are  
transmitted by a corresponding antenna for each transmitter, where

——the two high frequency transmitters (S5, S6) are each equipped with an the  
antennas are located in a spatial relationship (AS1, AS2) for transmitter diversity operation; and

where the receiving device includes an audio reproduction device and at least one  
receiver that receives the transmitted quadrature signals, the receiving device further includes a  
decoder that decodes the received quadrature signals and provides a decoded audio signal to  
thean audio reproduction device.

8. (Currently Amended) The Transmitting device system of (S40) according to Cclaim 7,  
where eharacterized in that the digitized audio signals are arranged in a first data sequence, the  
coding device (SC) generates a pair of first and second data sequences (D<sub>1</sub>, D<sub>2</sub>) from the first an

~~original data sequence (D<sub>o</sub>), and where the transmitting device include which are converted in a high frequency stage by two quadrature mixers that convert the pair of data sequences (M1, M2) to the same high-frequency band (f), are then supplied and provide the converted data sequences to the corresponding first or second antennas for transmission (AS1, AS2) to be transmitted.~~

9. (Currently Amended) ~~The Transmitting device system of (S40) according to Claim 8, where characterized in that the coding device (SC) implements coding generates the pair of data sequences based on the space-time block code.~~

10. (Currently Amended) ~~The system of claim 8, Receiving device (E50) for use in a wireless audio signal transmission method according to claim 1 between a transmitting device (S40) and the spatially adjacent receiving device (E50) which is associated with an audio signal reproduction device (LB) included in a three dimensional sound system;~~

~~characterized in that~~

~~the receiving device (E50) contains a single high frequency receiving stage (E5) to receive high frequency signals transmitted by the transmitter diversity method, which stage converts the high frequency signals to a significantly lower frequency position, wherein the transmitter diversity has two different signals which are transmitted by two antennas (AS1, AS2) but in the same frequency band (f); and~~

~~an analog to digital converter (ADE) connects to the high frequency receiving stage (E5), the converter being followed by a digital decoding device (CE) which decodes the transmitted symbols (A, B, C, D) from the signals in the low frequency position where the pair of~~

data sequences each includes data that represents symbols arranged as successive symbol pairs that are related in time.

11. (Currently Amended) ~~The system of Receiving device (E50) according to Claim 109, characterized in that where the decoding device (CE) implements decoding the data sequences based on the space-time block code, and where the receiving device includes contains the following functional units in the direction of the signal flow: an first electronic switch (Sw1) which that supplies the received quadrature signals digitized receive signal to a first and second terminal (1, 2) of a linear combination device ( $h^+$ ) at the a clock period of at the symbol rate ( $t_s$ ); a symbol decision element (ET) connected to the two outputs of the linear combination device ( $h^+$ ), to which decision element a symbol table (TB) is connected to the symbol decision element that which supplies at the logical level of each of the associated symbols within the received quadrature signals at the two parallel outputs; and finally, another a second electronic switch (Sw2) which that regenerates the original first data sequence ( $D_o$ ) from the parallel available symbols by alternate switching at the symbol clock period ( $t_s$ ).~~

12. (New) A system for wireless transmission and reception of audio signals, comprising a transmitter side and a receiver side, where the transmitter side comprises:

a source of audio signals that provides the audio signals in a data sequence;

an encoder that codes the data sequence into a pair of data streams;

a pair of transmitters that each transmits a corresponding one of the pair of data streams;

and

a pair of transmitting antennas each associated with a corresponding one of the pair of transmitters, the transmitting antennas being located in a spatially-separated transmitter diversity relationship with each other, the antennas transmitting the corresponding one of the pair of data streams on a frequency that is that same for each antenna;

and where the receiver side comprises

a receiving antenna that receives the transmitted pair of data streams;

a receiver that processes the received data streams;

a decoder that recovers the data sequence from the processed data streams and provides an audio signal in response thereto; and

an audio reproduction device that outputs the audio signal from the decoder.

13. (New) The system of claim 12, where the audio signals are in analog format, and where the transmitter side digitizes the audio signals.

14. (New) The system of claim 12, where the audio signals are in digital format.

15. (New) This system of claim 12, where the transmitter side compresses the data sequence, and where the receiver side decompresses the data sequence.

16. (New) The system of claim 12, where the encoder codes the data sequence into a pair of data streams each comprising symbols.



17. (New) The system of claim 16, where the transmitters transmit the data streams comprising symbols using quadrature amplitude modulation, and where the receiver processes the received data streams by evaluating the received data streams at predefined times at which each of the symbols within the transmitted data streams occupies a defined state in the quadrature signal plane.

18. (New) The system of claim 17, where the receiver determines the defined state that corresponds to the transmitted symbols by sampling and digitizing the received data streams at least at defined times and at a frequency that is lower than the frequency that the data streams are transmitted.

19. (New) The system of claim 16, where the encoder codes the data sequence using space-time block codes, and where the receiver processes the received data streams using space-time block codes.

20. (New) The system of claim 12, where the transmitters modulate the pair of data sequences onto a high-frequency carrier signal, and where the receiver converts the received data streams to a frequency that is lower than that of the high-frequency carrier signal.